CARSON®
Innovation In Quality Optics

INSTRUCTIONS

Congratulations on selecting your new Carson binoculars!

With reasonable care, your binoculars will provide you with years of enjoyment. In order to achieve optimum performance, please read the instructions carefully on the proper use and care of your binoculars.

Instructions for Care

Like any fine optical instrument, your binoculars should be given sensible care. Keep the lens covers (not included with some models) on the lenses when binoculars are not in use. Do not drop or violently jar your binoculars. This may cause the internal optical components of your binoculars to become misaligned resulting in a double image when looking through them. Non-waterproof models should not be exposed to excessive moisture.

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Cleaning

Cleaning must be done safely and carefully to avoid scratching the lenses and permanently damaging your binoculars. Safe cleaning can be accomplished using a Carson **LensPen**™ lens cleaning device. If you do not own a Carson **LensPen**™, please follow the procedure below:

1. Blow away any dust or debris on the lens (or use a soft lens brush).
2. To remove dirt, grease or fingerprints, clean with a soft cotton cloth rubbing in a circular motion. Use of a coarse cloth or unnecessary rubbing may scratch the lens surface and eventually cause permanent damage.
3. For a more thorough cleaning, photographic type lens cleaning fluid may be used. Always apply the fluid to the cleaning cloth, never directly on the lens.
4. **IMPORTANT:** Never attempt to clean your binoculars internally or try to take it apart.

Basic Binocular Terminology

Binoculars are commonly identified using two sets of numbers. The most common size is 8x21mm. The "8" is the magnification, and "21" is the diameter of the objective lens in millimeters.

Magnification: Typically binoculars range from 5x to 12x power. A 5x binocular means that the image you see through the binocular is 5 times larger than it would be when viewed with the naked eye.

There are larger power binoculars available, and most higher power binoculars are usually the variable type, also known as zoom binoculars. A 20x – 80x zoom binocular, for instance, has a magnification range from 20 to 80 power.

Objective lens: The objective lens (front lens) diameter is listed in millimeters. The larger the lens, the more light can enter the binocular and the brighter the image will be. However, binoculars with smaller lenses are more compact and portable.

Field-of-View: (also known as FOV) is the total width of the viewing area through your binoculars from left to right. It is often measured in feet at 1,000 yards. For instance, if you see "358 ft @ 1000 yds", that means an object that is 358' wide and a thousand yards away will take up the entire viewing area of the binocular image you see. Sometimes this measurement is listed in degrees and is referred to as Angle of View, i.e. 8°. To convert to feet, multiply the number of degrees by 52.5 and you will get the FOV. Example: If Angle of View is 8°, Field of View is 8 x 52.5 = 420' @ 1,000 yds.

Types of Binoculars

Fixed focus and **zoom** binoculars are alternatives to standard binoculars, which traditionally offer magnification in one set power only, with a wheel or knob used to engage the focus mechanism.

Fixed focus binoculars cannot be adjusted and are usually fixed at an average distance for use in concerts, opera, or any situation in which variable focusing on objects is not required.

Zoom binoculars offer the user a range of magnifications. The zoom function can be operated by hand using a lever, or by switch when driven by a motor. Zoom systems vary by model.

Waterproof binoculars and **fog-proof** binoculars should be nitrogen purged and O-ring sealed in order for their internal lenses to be truly resistant to fogging and/or water damage.

Style of Binoculars – Porro or Roof Prism Design

Binoculars come in two distinct styles in which design is dependent upon the type of prism system used. The image that passes through a binocular is upside down (a function of the lens) and needs to be corrected. This prism is the optical glass inside a binocular whose purpose is to "invert" the image.

Roof Prism System: the prisms overlap closely allowing the objective (front) lens to line up directly with the eyepieces. The result is a slim, streamlined shape in which the lenses and prisms that magnify and correct the image are in a straight line.

Porro Prism Systems: the objective lens is offset from the eyepiece. Light is redirected through the binocular internally. The result is a shorter, stockier shaped binocular. In general, porro prism binoculars offer a wider field of view. Most zoom binoculars use the porro prism system for this reason.

Eye Adjustments

How to adjust for distance between your eyes:

The distance between the eyes, called "interpupillary distance," varies from person to person. To achieve perfect alignment of lens to eye, follow these simple steps:

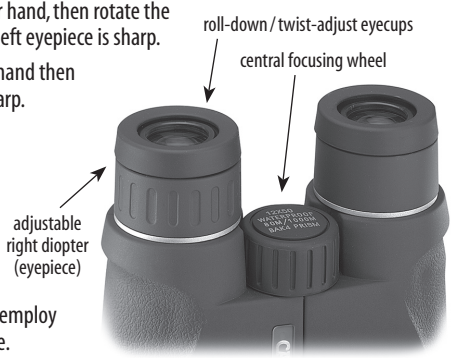
1. Hold your binoculars in the normal viewing position
2. Grasp each barrel firmly. Move the barrels closer together or farther apart until you see a single circular field. Always reset your binoculars to this position before using.

Focusing your binoculars:

Most binoculars have a center focus wheel and an independent right diopter eyepiece to account for small differences in the strength of each eye. Please follow the steps below to focus properly:

1. Adjust the interpupillary distance.
2. Rotate the right eyepiece to its index mark and sight on a fixed distant object.
3. Cover the right objective (front) lens with your hand, then rotate the central focusing wheel until the image in the left eyepiece is sharp.
4. Cover the left objective (front) lens with your hand then rotate the right eyepiece until the image is sharp. (Note this setting for future use.)
5. Image should now be focused to your individual eyestrength.

Please note that certain binoculars have different focusing systems. Some may only contain a center focus wheel which will focus both eyepieces simultaneously. Some may employ a central focus wheel with a rotating left eyepiece.



Others will not have a center focus wheel, and you must turn each eyepiece independently to focus. Never try and force an eyepiece if it was not designed to turn. This may seriously damage your binocular.

Roll-Down Eyecups

Your binoculars may be fitted with rubber eyecups designed to exclude extraneous light. If you wear eyeglasses, you may be able to roll-down the eyecups. Some binoculars are outfitted with twisting eyecups which raise and lower the eyecups. For eyeglass wearers, lowering or rolling down the eyecups will bring your eyes closer to the binocular lenses, thus providing an improved field of view. Please note that not all binoculars are equipped with roll-down or twisting eyecups.

Operation of Zoom Binoculars

Many binoculars are equipped with a zoom function to allow you to take a closer look at the object you are viewing. In order to operate a zoom binocular, you must first focus on a distant object. To zoom in, simply adjust the zoom lever or switch to the desired magnification setting. Please note that you may need to adjust the center focus wheel slightly when changing the power setting.

CAUTION: VIEWING THE SUN CAN CAUSE PERMANENT EYE DAMAGE. DO NOT VIEW THE SUN WITH THIS BINOCULAR OR EVEN WITH THE NAKED EYE.

CARSON LIFETIME LIMITED WARRANTY

This Carson product is warranted to be free from defects in material and workmanship. Carson will, at its option and without charge, either repair any part or assembly of parts found to be defective in material or workmanship, or replace this Carson product with a Carson product of comparable value and condition, subject to the limitations and exclusions noted herein.

This warranty extends to the original purchaser only and is not assignable or transferable. It shall not apply to any product that has been subject to misuse, abuse, negligence or accident, or to any defects or damage directly or indirectly caused by the use of unauthorized replacement parts and/or service performed by unauthorized personnel.

This warranty gives you specific legal rights, and you may also have other rights which could vary from state to state. Some states do not allow limitations on the life of an implied warranty and/or do not allow excluding or limiting incidental or consequential damages. If so, the above limitations or exclusions may not apply to you.

WARRANTY PROCEDURE

Provide proof of purchase. A receipt or other dated proof of purchase must be included with merchandise being returned for a warranty claim to be processed.

Call or write for authorization. Before returning any product for a warranty claim, a Return Authorization (RA) number must be obtained. No merchandise will be accepted without an RA, and failure to obtain an RA will prevent or delay processing of the warranty claim. To obtain an RA call 631-547-5000, or write to Carson Warranty Service, 35 Gilpin Avenue, Hauppauge NY 11788-4723 with a description of the problem. Include your name, address and telephone number.

Package the return carefully. Shippers will not reimburse for damages due to insufficient packaging, even if the merchandise is insured. Print the RA number prominently on the top of the package.

Prepay shipping. Insure the package. Send it to Carson Warranty Service, 35 Gilpin Avenue, Hauppauge NY 11788-4723, together with a check in the amount of $12.00 to cover the cost of handling. Merchandise must be shipped prepaid. Carson will not accept merchandise C.O.D.